

Application No. 10/594,044  
Amdt. dated Sep. 18, 2008  
Reply to Office Action of June 23, 2008  
Attorney Docket No. 1217-062553

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims**

1. (Currently Amended) A process for producing a Schottky junction type semiconductor device, comprising forming a Schottky electrode on a surface of a silicon carbide epitaxial layer, wherein a Schottky electrode made of molybdenum, tungsten, or an alloy thereof is formed on the surface of the silicon carbide epitaxial layer and is subjected to heat treatment so as to induce an alloying reaction at an interface of the silicon carbide epitaxial layer and the Schottky electrode, thereby forming an alloy layer at the interface, whereby the height of a Schottky barrier is controlled in the range of 1.0 to 1.3 eV while maintaining an n-factor at a nearly constant low value at a value of 1.05 or lower.

2. (Original) A process for producing a Schottky junction type semiconductor device as defined in claim 1, wherein a heat treatment temperature is in the range of 300 to 1200°C.

3. (Cancelled).

4. (New) The process for producing a Schottky junction type semiconductor device as defined in claim 1, wherein the silicon carbide epitaxial layer is formed on a SiC monocrystal substrate and wherein an alloy layer that functions as an ohmic electrode is formed on a rear surface of the SiC monocrystal substrate through a heat treatment before forming the Schottky electrode.

5. (New) The process for producing a Schottky junction type semiconductor device as defined in claim 2, wherein the Schottky electrode is made

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of molybdenum and the height of a Schottky barrier is increased up to the range of 1.1 to 1.3 eV by the heat treatment.

6. (New) The process for producing a Schottky junction type semiconductor device as defined in claim 2, wherein the Schottky electrode is made of tungsten and the height of a Schottky barrier is decreased down to the range of 1.1 to 1.0 eV by the heat treatment.

7. (New) The process for producing a Schottky junction type semiconductor device as defined in claim 5, wherein the heat treatment temperature is in the range of 600 to 1200°C.

8. (New) The process for producing a Schottky junction type semiconductor device as defined in claim 6, wherein the heat treatment temperature is in the range of 600 to 1200°C.